



| | | | | | |
|------|------------|------------|------------|------------|-------------|
| 1 | ggtttaatta | cccaagtttg | agctccaaga | gcacacatct | gatacgtcggg |
| 51 | ttctactgta | ctccccgaaa | aaccaacaaa | aaacacaagt | ttttgaacac |
| 101 | ttgtaaagtc | agacagaaag | atgacgagaa | tgaatattgt | cagatgtcgg |
| 151 | agacgacaca | aaattttgga | aaattttgga | gaagagaatc | tcggcccgag |
| 201 | ctgctcgtcg | acgacttcaa | caaccgctgc | caccgaagct | ctcggaaaca |
| 251 | ccactgagga | tatgaggctt | aagcagcagc | gaagctcgtc | gcgtgccacg |
| 301 | gagcacgata | ttgtcgacgg | caatcaccac | gacgacgagc | acatcacaat |
| 351 | gagacggctt | cgacttgtca | aaaattcgcg | gacgcggcgt | agaacgacgc |
| 401 | ccgattcaag | tatggactgc | tatgaggaaa | acccgccatc | acaaaaactt |
| 451 | caataaatta | ttcttggatt | tctaaaaagt | catcaatgac | gtcattaatg |
| 501 | cttttactgc | tattcgcttt | tgtacagccg | tgtgcctcaa | tagtcgaaaa |
| 551 | acgatgcggc | ccaatcgata | ttcgaaatag | gccgtgggat | attaagccgc |
| 601 | aatggtcgaa | acttggatg | ccgaacgaaa | aagatttggc | tggtcagaga |
| 651 | atggtcaact | gcacagtgg | ggaagggttc | ctgacaatct | catttgtact |
| 701 | gaaacacaag | acaaaagcac | aagaagaaat | gcacgaaagt | ctacagccaa |
| 751 | gatattccca | agacgaattt | atcacttttc | cgcatctacg | tgaattactt |
| 801 | ggaactctgc | tcgtttttga | gactgaagga | ttagtggatt | tgcgtaaaat |
| 851 | tttcccaaat | cttcgtgtaa | ttggaggccg | ttcgttgatt | caacactatg |
| 901 | cgctgataat | ttatcgaaat | ccggatttgg | agatcggctt | tgacaagctt |
| 951 | tcgtaattc | gaaatgggtg | tgtacggata | atcgataatc | gaaaactgtg |
| 1001 | ctacacgaaa | acgattgatt | ggaacattt | gatcacttct | tccatcaacg |
| 1051 | atgttgctgt | tgataatgct | gccgagtacg | ctgtcactga | gactggattg |
| 1101 | atgtgccac | gtggagcttg | cgaagaggat | aaaggcgaat | caaagtgtca |
| 1151 | ttatttggag | gaaaagaatc | aggaacaagg | tgtcgaaaga | gttcagagtt |
| 1201 | gttggtcgaa | caccacttgc | caaaagtctt | gtgcttatga | tcgtcttctt |
| 1251 | ccaacgaaag | aaatcggacc | gggatgtgat | gcgaacggcg | atcgatgtca |
| 1301 | cgatcaatgc | gtgggcgggt | gtgagcgtgt | gaatgatgcc | acagcatgcc |
| 1351 | acgcgtgcaa | gaatgtctat | cacaagggaa | agtgtatcga | aaagtgtgat |
| 1401 | gctcacctgt | accttctctt | tcaacgtcgt | tgtgtgacct | gtgagcagtg |
| 1451 | tctgcagctg | aatccgggtg | tctcgaacaa | aacagtgcct | atcaaggcga |
| 1501 | cggcaggcct | ttgctcggat | aaatgtcccg | atggttatca | aatcaaccgc |
| 1551 | gatgatcatc | gagaatgccg | aaaatgcgtt | ggcaagtgtg | agattgtgtg |
| 1601 | cgagatcaat | cacgtcattg | atagctttcc | gaaggcacag | gcgatcaggc |
| 1651 | tatgcaatat | tattgacgga | aatctgacga | tcgagattcg | cggaaaacag |
| 1701 | gattcgggaa | tggcgtccga | gttgaaggat | atatttgcga | acattcacac |
| 1751 | gatcaccggc | tacctgttgg | tacgtcaatc | gtcacccgtt | atctcgttga |
| 1801 | acatgttcgg | gaatttacga | cgtattgagg | caaagtcaat | gttcagaaat |
| 1851 | ctatatgcta | tcacagtttt | tgaaaatccg | aatttataaa | agctattcga |
| 1901 | ttcaacgacg | gatttgacgc | ttgatcgtgg | aactgtgtca | attgccataa |
| 1951 | acaagatggt | atgcttcaag | tatatcaagc | agctaattgc | aaagttaaata |
| 2001 | ataccactcg | atccgataga | tcaatcagaa | gggacaaatg | gtgagaagg |
| 2051 | aatctgtgag | gatattggca | tcaacgtgag | catcacagcg | gtcaacgcgg |
| 2101 | actcgttctt | ctttagttgg | ccctcattca | acattaccga | tatagatcag |
| 2151 | cgaaagtctt | tcggctacga | gctcttcttc | aaagaagtcc | cacgaatcga |
| 2201 | tgagaacatg | acgatcgaag | aggatcgaag | tgcgtgtgtc | gattcgtggc |
| 2251 | agagtgtctt | caaacagtac | tacgagacgt | cgaacgggtg | accgaccccg |
| 2301 | gacattttta | tggatattgg | accgcgcgag | cgaattcggc | cgaatacgc |
| 2351 | ctacgcgtac | tatgtggcga | cgcagatgg | gttgcacgcc | ggtgcgaaga |
| 2401 | acgggtgata | gaagattgg | tttgtgagga | cgagctacta | tacgcctgat |
| 2451 | cctccgacgt | tggcactagc | gcaagtcatg | tcggacgcta | ttcatattac |
| 2501 | gtgggaagcg | ccgctccaac | cgaacgggag | cctcacgcat | tacacaatta |
| 2551 | tgtggcgtga | gaatgaagt | agcccgtag | aggaagccga | aaagttttgt |
| 2601 | acagatgcaa | gcacccccgc | aaatcgacaa | cgcacgaaag | atccgaaaga |
| 2651 | gacgattgta | gccgataagc | cagtcgatat | tccgtcatca | cgtaccgtag |
| 2701 | ctccgacact | tttgactatg | atgggtcacg | aagatcagca | gaaaacgtgc |

Fig. 2B-1



Replacement Sheet

Title: Therapeutic and Diagnostic Tools for Impaired Glucose Tolerance Conditions

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2751 gctgcaacgc cgggttggtt ttcgtgttcg gctatcgaag aatcatcgga
2801 acagaacaag aagaagcgac cggatccgat gtcggcgatc gaatcatctg
2851 catttgagaa taagctgttg gatgaggttt taatgccgag agacacgatg
2901 cgagtgagac gatcaattga agacgcgaat cgagtcagtg aagagttgga
2951 aaaagctgaa aatttgggaa aagctccaaa aactctcggt ggaaagaagc
3001 cgctgatcca tatttcgaag aagaagccgt cgagcagcag caccacatcc
3051 acaccggctc caacgatcgc atcaatgtat gccttaacaa ggaaaccgac
3101 tacggtgccg ggaacaagga ttcggctcta cgagatctac gaacctttac
3151 ccggaagctg ggcgattaat gtatcagctc tggcattgga taatagttat
3201 gtgatacgaa atttgaagca ttacacactt tatgcgattt ctctatccgc
3251 gtgccaaaac atgacagtac ccggagcadc ttgctcaata tcccacgtg
3301 cgggagcatt gaaacgaaca aaacacatca cagacattga taaagtgttg
3351 aatgaaacaa ttgaatggag atttatgaat aatagtcacac aagtcacgt
3401 gacgtgggat ccaccgactg aagtgaatgg tggaaatattc gggtatgttg
3451 taaagcttaa gtcaaaagtc gatggatcaa ttgttatgac gagatgtgtc
3501 ggtgcgaaga gaggatatcc aacacggaat caggggtgtcc tattccagaa
3551 tttggccgat ggacgttatt ttgtctcagt aacggcgacc tctgtacacg
3601 gcgctggacc ggaagccgaa tcctccgacc caatcgctcg catgacgcca
3651 ggcttcttca ctgtggaaat cattctcggc atgcttctcg tctttttgat
3701 tttaatgtca attgccggtt gtataatcta ctactacatt caagtacgct
3751 acggcaaaaa agtgaaagct ctatctgact ttatgcaatt gaatcccga
3801 tattgtgtgg acaataagta caatgcagac gattgggagc tacggcagga
3851 tgatgttgtg ctcgacaac agtgtggaga gggatcatcc ggaaaagtg
3901 acctaggaac tggaaataat gttgtttctc tgatgggtga tcgtttcgga
3951 ccgtgtgcta ttaagattaa tgtagatgat ccagcgctga ctgagaatct
4001 caactatctc atggaagcta atattatgaa gaactttaag actaacttta
4051 tcgtccaact gtacggagtt atctctactg tacaaccage gatggttgtg
4101 atggaaatga tggatcttgg aaatctccgt gactatctcc gatcgaaacg
4151 cgaagacgaa gtgttcaatg agacggactg caacttttcc gacataatcc
4201 cgagggataa attccatgag tgggcccgcac agatttgtga tgggtatggcg
4251 tacctggagt cgctcaagtt ttgccatcga gatctcgccg cacgtaattg
4301 catgataaat cgggatgaga ctgtcaagat tggagatttc ggaatggctc
4351 gtgatctatt ctatcatgac tattataagc catcgggcaa gcgtatgatg
4401 cctgttcgat ggatgtcacc cgagtcgttg aaagacggaa agtttgactc
4451 gaaatctgat gtttgagct cggagttgt tctctatgaa atggttacac
4501 tcggtgctca gccatatatt ggtttgagta atgatgaggt gttgaattat
4551 attggaatgg cccggaaggt tatcaagaag cccgaatgtt gtgaaaacta
4601 ttggtataag gtgatgaaaa tgtgctggag atactcacct cgggatcgtc
4651 cgacgttcc tccagctcgt catcttctag cagctgaagc ttcaccagaa
4701 ttccgagatt tatcatttgt cctaaccgat aatcaaataa tccttgacga
4751 ttcagaagca ctggatcttg atgatattga tgatactgat atgaatgatc
4801 aggttgtcga ggtggcaccg gatgttgaga acgtcgaggt tcagagtgat
4851 tcggaacgtc ggaatacggg ttcaataccg ttgaaacagt ttaagacgat
4901 ccctccgatc aatgcgacga cgagtcattc gacaatatcg attgatgaga
4951 caccgatgaa agcgaagcag cgagaaggat cgctggatga ggagtacgca
5001 ttgatgaatc atagtggagg tccgagtgat gcggaagtgc ggacgtatgc
5051 tggatgagga gattatgttg agagagatgt tccagagaaat gatgtgccaa
5101 cgcgacgaaa tactggtgca tcaacatcaa gttacacagg tgggtgtcca
5151 tattgcctaa caaatcgtgg tggttcaaat gaacgaggag ccggtttcgg
5201 tgaagcagta cgattaactg atggtgttgg aagtggacat ttaaattgat
5251 atgattatgt tgaaaaagag atatcatcca tggatacgcg ccggagcacg
5301 ggcgctcga gctcttccta cgggtgtcca cagacgaatt ggagtgga
5351 tcgtggtgcc acgtattata cgagtaaagc tcaacaggga gcaactgcag
5401 cagcagcagc agcagcagct ctccaacagc aacaaaatgg tggtcgaggc
5451 gatcgattaa ctcaactacc cggaaactgga catttacaat cgacacgtgg
5501 tggacaagat ggagattata ttgaaactga accgaaaaat tatagaaata
```

Fig. 2B-2



Replacement Sheet
Title: Therapeutic and Diagnostic Tools for Impaired Glucose
Tolerance Conditions
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```
5551 atggatctcc atcgcgaaac ggcaacagcc gtgacatttt caacggacgt
5601 tcggctttcg gtgaaaatga gcatctaatac gaggataatg agcatcatcc
5651 acttgtctga aacccccaaa aaatcccgcc tcttaaatta taaattatct
5701 cccacattat catatctcta cacgaatatac ggattttttt tcagattttt
5751 tctgaaaaat tctgaataat tttaccccat ttttcaaatac tctgtatttt
5801 tttttgttat tacccc
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Fig. 2B-3

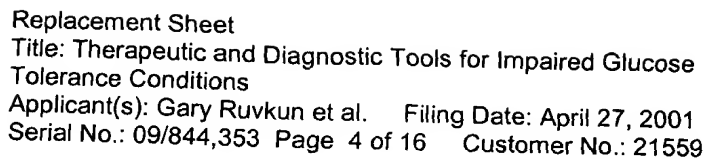
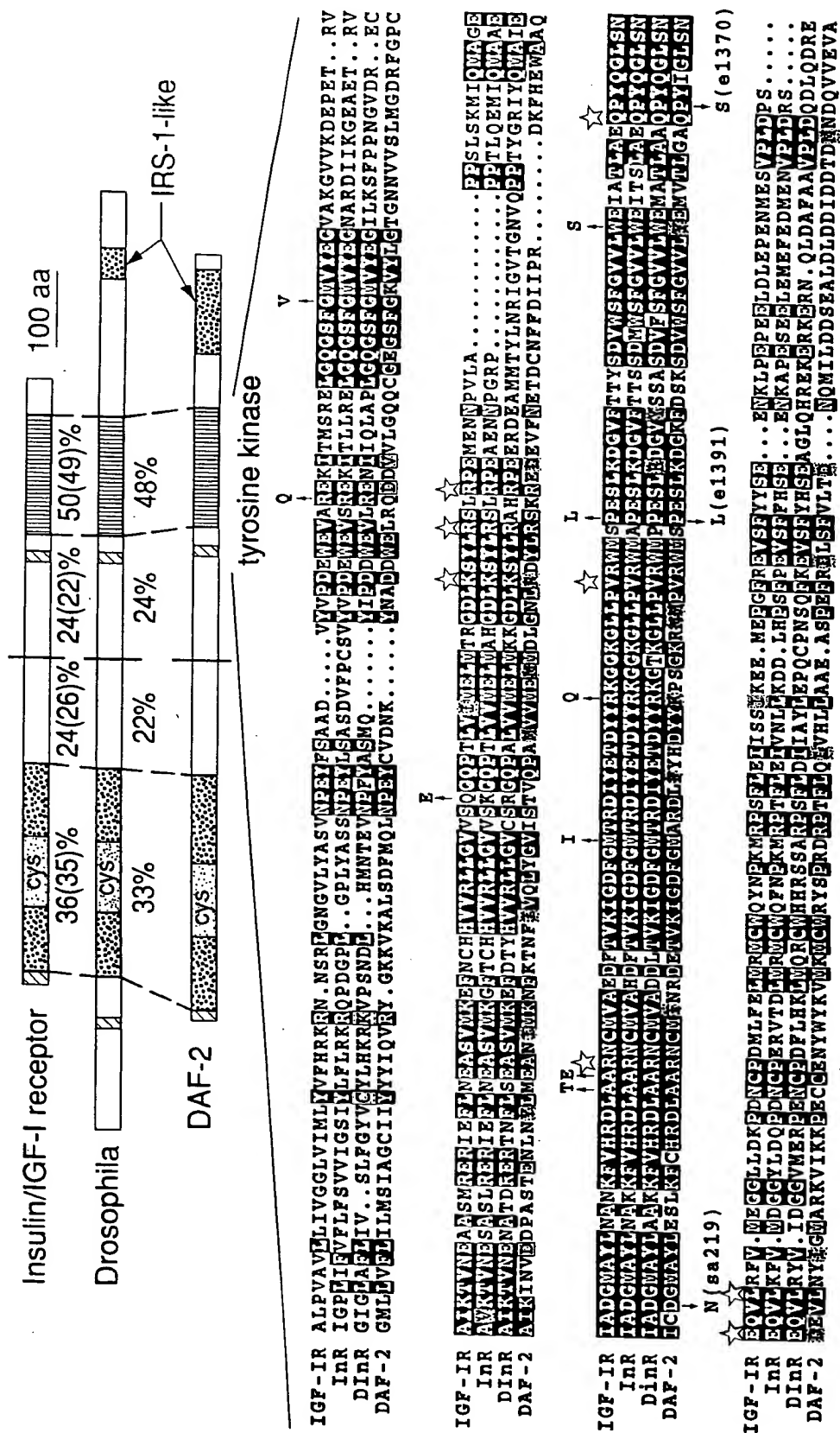


Diagram illustrating the domain organization and sequence identity of the Insulin/IGF-I receptor, Drosophila, and DAF-2. The diagram shows three protein structures with domains: extracellular, transmembrane, and intracellular. The intracellular domain is further divided into IRS-1-like and DAF-2-like regions. Sequence identity percentages are indicated between the Insulin/IGF-I receptor and Drosophila (36%, 24%, 24%, 48%) and between Drosophila and DAF-2 (33%, 22%, 24%, 48%). A 100 aa scale bar is provided.

Fig. 2C-1





Replacement Sheet

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```
1  atgaagctaa tagcaacttc tcttctagtt cccgacgagc acacaccgat
51 gatgtcacca gtgaatacaa ctacaaagat tctacaacgg agtggtatta
101 aaatggaaat cccgccatat ttggatccag acagtcagga tgatgaccgg
151 gaagatggtg tcaactaccc ggatccagat ttatttgaca caaaaaacac
201 aaatatgacc gagtacgatt tggatgtgtt gaagcttgga aaaccagcag
251 tagatgaagc acggaaaaag atcgaagttc ccgacgctag tgcgccgcca
301 aacaaaattg tagaatattt gatgtattat agaacgttaa aagaaagtga
351 actcatacaa ctgaatgcgt atcggacaaa acgaaatcga ttatcgttga
401 acttggtcaa aaacaatatt gatcgagagt tcgacaaaaa agcttgcgag
451 tccctggtga aaaaattgaa ggataagaag aatgatctcc agaacctgat
501 tgatgtggtt ctttcaaaag gtacaaaata taccggttgc attacaattc
551 caaggacact tgatggccgg ttacaggtcc acggaagaaa aggtttccct
601 cacgtagtct atggcaaact gtggaggttt aatgaaatga caaaaaacga
651 aacgcgtcat gtggaccact gcaagcacgc atttgaaatg aaaagtgaca
701 tggatatcgt gaatccctat cactacgaaa ttgtcattgg aactatgatt
751 gttgggcaga gggatcatga caatcgagat atgccgccgc cacatcaacg
801 ctaccacact ccaggtcggc aggatccagt tgacgatatg agtagattta
851 taccaccagc ttccattcgt ccgcctccga tgaacatgca cacaaggcct
901 cagcctatgc ctcaacaatt gccttcagtt ggcgcaacgt ttgcccatcc
951 tctcccacat caggcgccac ataaccagg ggtttcacat ccgtactcca
1001 ttgctccaca gacccattac ccgttgaaca tgaacccaat tccgcaaagt
1051 ccgcaaagtgc cacaaatgcc accacctctc catcagggat atggaatgaa
1101 tggggccgagt tgctcttcag aaaacaacaa tccattccac caaaatcacc
1151 attataatga tattagccat ccaaatacct attcctacga ctgtggtccg
1201 aacttgtacg ggtttccaac tccttatccg gattttcacc atcctttcaa
1251 tcagcaacca caccagccgc cacaactatc acaaaaccat acgtcccaac
1301 aaggcagtca tcaaccaggg caccaaggtc aggtaccgaa tgatccacca
1351 atttcaagac cagtgttaca accatcaaca gtcaccttgg acgtgttccg
1401 tcggtactgt agacagacat ttggaaatcg attttttgaa ggagaaagtg
1451 aacaatccgg cgcaataatt cggcttagta acaaattcat tgaagaattt
1501 gattcgccga tttgtggtgt gacagttggt cgaccgcgga tgacagacgg
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1601 gcaagttcat tttgaggctc acatcagaaa gtgtaacttt ctgaggagag
1651 gggccagaag ttagtgattt gaacgaaaaa tggggaacaa ttgtgtacta
1701 tgagaaaaat ttgcaaattg gcgagaaaaa atgttcgaga ggaaatttcc
1751 acgtggatgg cggattcatt tgctctgaga atcgttacag tctcggactt
1801 gagccaaatc caattagaga accagtggcg tttaaagttc gtaaagcaat
1851 agtggatgga attcgctttt cctacaaaaa agacgggagt gtttggttc
1901 aaaaccgcat gaagtaccgg gtatttgtca cttctgggta tctcgacgag
1951 caatcaggag gcctaaagaa ggataaagtg cacaaagttt acggatgtgc
2001 gtctatcaaa acgtttggct tcaacgtttc caaacaatc atcagagacg
2051 cgcttctttc caagcaaagt gcaacaatgt acttgcaagg aaaattgact
```

Fig. 11A-1



| | | | | | |
|------|------------|------------|------------|------------|------------|
| 2101 | ccgatgaatt | atatctacga | gaagaagact | caggaagagc | tgccaaggga |
| 2151 | agcaacacgc | accactgatt | cattggccaa | gtactgttgt | gtccgtgtct |
| 2201 | cgttctgcaa | aggatttgga | gaagcatacc | cagaacgccc | gtcaattcat |
| 2251 | gattgtccag | tttgattga | gttgaaaatc | aacattgcct | acgatttcat |
| 2301 | ggattcaatc | tgccagtaca | taaccaactg | cttcgagccg | ctaggaatgg |
| 2351 | aagattttgc | aaaattggga | atcaacgtca | gtgatgacta | aatgataact |
| 2401 | tttttcactc | accctactag | atactgattt | agtcttattc | caaatcatcc |
| 2451 | aacgatatca | aactttttcc | tttgaacttt | gcatactatg | ttatcacaag |
| 2501 | ttccaagcag | tttcaataca | aacataggat | atgttaacaa | cttttgataa |
| 2551 | gaatcaagtt | accaactggt | cattgtgagc | tttgagctgt | atagaaggac |
| 2601 | aatgtatccc | atacctcaat | ctttaatagt | catcagtcac | tggtcccgcg |
| 2651 | ccaatttttt | cgattcgcat | atgtcatata | ttgcaccgtg | gcccttttta |
| 2701 | ttgtaacttt | taatataatt | tcttcccaac | ttgtgaatat | gattgatgaa |
| 2751 | ccaccatttt | gagtaataaa | tgtatttttt | gtgg | |

Fig. 11A-2



Replacement Sheet

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1 gtaatcaaat tgtaaaggaa aaatattaat agtcagagta cacataaatg
51 ggtgatcatc ataatttaac gggccttccc ggtacctcca tcccgccaca
101 gttcaactat tctcagcccg gtaccagcac cggaggcccg ctttatggtg
151 gaaaaccttc tcatggattg gaagatattc ctgatgtaga ggaatatgag
201 aggaacctgc tcggggctgg agcaggtttt aatctgctca atgtaggaaa
251 tatggctaata gttcccgcagc agcacacacc gatgatgtca ccagtgaata
301 caactacaaa gattctacaa cggagtggta ttaaaatgga aatcccgcca
351 tatttgatc cagacagtca ggatgatgac ccggaagatg gtgtcaacta
401 cccggatcca gatttatattg acacaaaaaa cacaaatatg accgagtacg
451 atttggatgt gttgaagctt ggaaaaccag cagtagatga agcacggaaa
501 aagatcgaag ttcccgcgcg tagtgcgccg ccaaacaaaa ttgtagaata
551 tttgatgtat tatagaacgt taaaagaaaag tgaactcata caactgaatg
601 cgtatcggac aaaacgaaat cgattatcgt tgaacttggt caaaaaaat
651 attgatcgag agttcgacca aaaagcttgc gagtccctgg tgaaaaaatt
701 gaaggataag aagaatgatc tccagaacct gattgatgtg gttctttcaa
751 aaggtaaaaa atataccggt tgcattacaa ttccaaggac acttgatggc
801 cggttacagg tccacggaag aaaaggtttc cctcacgtag tctatggcaa
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901 actgcaagca cgcatttgaa atgaaaagtg acatgggatg cgtgaatccc
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1201 cacataaccc aggggtttca catccgtact ccattgctcc acagaccat
1251 taccgcgttg acatgaaccc aattccgcaa atgccgcaa tgccacaaat
1301 gccaccacct ctccatcagg gatatggaat gaatgggccc agttgctctt
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1401 catccaaatc actattccta cgactgtggt ccgaacttgt acgggtttcc
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1601 acaaccatca acagtcacct tggacgtgtt ccgtcggtag tgtagacaga
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1701 attcgggtcta gtaacaaatt cattgaagaa tttgattcgc cgatttgtgg
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2001 atttgctctg agaatcgtaa cagtctcgga cttgagccaa atccaattag
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```

Fig. 11B-1



Replacement Sheet

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2101 tttcctacaa aaaagacggg agtgtttggc ttcaaaaccg catgaagtac
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2251 gcttcaacgt ttccaaacaa atcatcagag acgcgcttct ttccaagcaa
2301 atggcaacaa tgtacttgca aggaaaattg actccgatga attatatcta
2351 cgagaagaag actcaggaag agctgcgaag ggaagcaaca cgcaccactg
2401 attcattggc caagtactgt tgtgtccgtg tctcgttctg caaaggattt
2451 ggagaagcat acccagaacg cccgtcaatt catgattgtc cagtttggat
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2551 acataaccaa ctgcttcgag ccgctaggaa tggaagattt tgcaaaattg
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2701 tcctttgaac tttgcatact atgttatcac aagttccaag cagtttcaat
2751 acaaacatag gatatgttaa caacttttga taagaatcaa gttaccaact
2801 gttcattgtg agctttgagc tgtatagaag gacaatgtat cccataacct
2851 aatctttaat agtcatcagt cactggtccc gcaccaattt tttcgattcg
2901 catatgtcat atattgcacc gtggcccttt ttattgtaac ttttaataata
2951 ttttcttccc aacttgtgaa tatgattgat gaaccaccat tttgagtaat
3001 aaatgtattt tttgtgg
```

Fig. 11B-2



| | | | | | | | | | | |
|------|----------|-------|----------|--------|---------|----------|----------|--------|---------|---------|
| 1 | gtaatcaa | at | tgtaaagg | aa | aatatta | at | agtcagag | ta | cacataa | aatg |
| 51 | ggtgatc | atc | ataattt | aa | gggcctt | ccc | ggtacct | cca | tcccgc | caca |
| 101 | gttcaac | tat | tctcag | ccc | gtaccag | cac | cggagg | ccc | ctttat | ggtg |
| 151 | gaaaac | cttc | tcatgg | attg | gaagata | ttc | ctgatg | taga | ggaata | tgag |
| 201 | aggaac | ctgc | tcgggg | ctgg | agcagg | tttt | aatctg | ctca | atgtag | gaaa |
| 251 | tatggc | taat | gaattt | aaac | caataat | cac | attggac | cag | aaacc | cctc |
| 301 | gtgatg | ccaa | caagtc | attg | gcattca | atg | gcggtt | tgaa | gcta | taact |
| 351 | ccgaaa | actg | aagttc | ccga | cgagcac | aca | ccgatg | atgt | caccag | tgaa |
| 401 | tacaact | taca | aagatt | ctac | aacggag | tgg | tattaa | aatg | gaaat | cccgc |
| 451 | catatt | tggga | tccag | acagt | caggat | gatg | accgga | aga | tggtg | tcaac |
| 501 | tacccg | gatc | cagatt | ttatt | tgacaca | aaa | aacaca | aaata | tgacc | gagta |
| 551 | cgattt | ggat | gtgtt | gaagc | ttggaaa | aacc | agcagta | gat | gaagc | acgga |
| 601 | aaaaga | tcga | agttcc | cga | gctagt | gcgc | cgccaa | acaa | aattgt | agaa |
| 651 | tatttg | atgt | attata | gaac | gttaa | aaaga | agtga | actca | taca | actgaa |
| 701 | tgcgta | tcgg | acaaa | acgaa | atcgat | tatc | gttga | acttg | gtca | aaaaaca |
| 751 | atattg | atcg | agagtt | cga | caaaa | agctt | gcgagt | ccct | ggtg | aaaaaaa |
| 801 | ttgaag | gata | agaaga | atga | tctcc | agaac | ctgatt | gatg | tggtt | ccttc |
| 851 | aaaagg | taca | aaatata | accg | gttgca | ttac | aattcc | aagg | acactt | gatg |
| 901 | gccggt | taca | ggtcc | acgga | agaaa | aggtt | tccctc | acgt | agtct | atggc |
| 951 | aaactg | tggga | ggttt | aatga | aa | gacaaa | aacgaa | acgc | gtcat | gtgga |
| 1001 | ccactg | caag | cacgc | atttg | aaatg | aaaag | tgacat | ggta | tgcg | tgaatc |
| 1051 | cctatc | acta | cgaa | attgtc | attgg | aaacta | tgattg | tgtg | gcag | agggat |
| 1101 | catgac | aatc | gagata | tgcc | gccgc | ccacat | caacg | ctacc | acact | ccagg |
| 1151 | tcggc | aggat | ccagtt | gacg | atatg | agtag | atttata | acca | ccag | ctcca |
| 1201 | ttcgt | ccgc | tccgat | gaac | atgc | acacaa | ggcct | cagcc | tatgc | ctcaa |
| 1251 | caattg | cctt | cagttg | gcgc | aacgtt | tgcc | catcct | ctcc | cacat | caggc |
| 1301 | gccac | ataac | ccaggg | gttt | cacat | ccgta | ctccat | tgt | ccac | agacc |
| 1351 | attacc | cgtt | gaacat | gaac | ccaatt | ccgc | aaatg | ccgca | aatg | ccacaa |
| 1401 | atgcc | accac | ctctcc | atca | gggat | atgga | atgaat | gggc | cgagt | tgtc |
| 1451 | ttcaga | aaaac | aacaat | ccat | tccac | caaaa | tcacc | attat | aatga | tatta |
| 1501 | gccat | ccaaa | tcact | attcc | tacga | ctgtg | gtccg | aaactt | gtac | gggtt |
| 1551 | ccaact | cctt | atccg | gattt | tcacc | atcct | ttcaat | cagc | aacc | acacca |
| 1601 | gccgc | ccaaa | ctatc | acaaa | accata | acgtc | ccaaca | aggc | agtc | atcaac |
| 1651 | caggg | cacca | aggtc | aggta | ccgaat | gatc | cacca | atttc | aagac | cagtg |
| 1701 | ttaca | accat | caacag | tcac | cttgg | acgtg | ttccg | tcggt | actg | tagaca |
| 1751 | gacatt | tggga | aatcg | atttt | ttga | aggaga | aagtga | acaa | tccgg | cgcaa |
| 1801 | taattc | ggtc | tagta | acaaa | ttcatt | gaag | aatttg | attc | gccg | atttgt |
| 1851 | ggtgt | gacag | ttgttc | gacc | gcggat | gaca | gacggt | gagg | ttttg | gagaa |
| 1901 | catcat | gccg | gaagat | gcac | catat | catga | catttg | caag | ttcatt | tttga |
| 1951 | ggctc | acatc | agaa | agtgt | acttt | tctcag | gagag | gggcc | aga | agttagt |
| 2001 | gattt | gaacg | aaaa | atggg | aa | caattgtg | tactat | gaga | aaa | atttgca |
| 2051 | aattg | gcgag | aaaa | aatgtt | cgag | aggaaa | tttcc | acgtg | gatg | gcggat |

Fig. 11C-1



Replacement Sheet

Title: Therapeutic and Diagnostic Tools for Impaired Glucose Tolerance Conditions

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| | | | | | |
|------|------------|-------------|-------------|------------|-------------|
| 2101 | tcatttgctc | tgagaatcgt | tacagtctcg | gacttgagcc | aatccaatt |
| 2151 | agagaaccag | tggcgtttaa | agttcgtaaa | gcaatagtg | atggaattcg |
| 2201 | cttttcctac | aaaaaagacg | ggagtgtttg | gcttcaaaac | cgcatgaagt |
| 2251 | accgggtatt | tgtcacttct | gggtatctcg | acgagcaatc | aggaggccta |
| 2301 | aagaaggata | aagtgcacaa | agtttacgga | tgtgcgtcta | tcaaaacggt |
| 2351 | tggcttcaac | gtttccaaac | aatcatcag | agacgcgctt | ctttccaagc |
| 2401 | aatggcaac | aatgtacttg | caaggaaaat | tgactccgat | gaattatatac |
| 2451 | tacgagaaga | agactcagga | agagctgcga | agggaagcaa | cacgcaccac |
| 2501 | tgattcattg | gccaaagtact | gttgtgtccg | tgtctcgttc | tgcaaaggat |
| 2551 | ttggagaagc | ataccagaa | cgcccgctcaa | ttcatgattg | tccagtttgg |
| 2601 | attgagttga | aatcaacat | tgccacgat | ttcatggatt | caatctgcca |
| 2651 | gtacataacc | aactgcttcg | agccgctagg | aatggaagat | tttgcaaaat |
| 2701 | tgggaatcaa | cgtcagtgat | gactaaatga | taactttttt | cactcaccct |
| 2751 | actagatact | gatttagtct | tattccaaat | catccaacga | tatcaaactt |
| 2801 | tttcctttga | actttgcata | ctatgttatc | acaagttcca | agcagtttca |
| 2851 | atacaaacat | aggatatgtt | aacaactttt | gataagaatc | aagttaccaa |
| 2901 | ctgttcattg | tgagctttga | gctgtataga | aggacaatgt | atcccatacc |
| 2951 | tcaatcttta | atagtcatca | gtcactggtc | ccgcaccaat | tttttcgatt |
| 3001 | cgcatatgtc | atatattgca | ccgtggccct | ttttattgta | acttttaata |
| 3051 | tattttcttc | ccaacttgtg | aatatgattg | atgaaccacc | attttgagta |
| 3101 | ataaatgtat | tttttgtgg | | | |

Fig. 11C-2

13V13



Replacement Sheet

Title: Therapeutic and Diagnostic Tools for Impaired Glucose Tolerance Conditions

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| | | | | | | |
|------|------------|------------|-------------|------------|-------------|------------|
| 1 | cggaagccat | ggagctcgag | atctgattgc | tggacacgga | cggaactccg | acgtatctcg |
| 61 | cagatgcatg | ttaacatttt | acatccacaa | ctgcaaacga | tggctcgagca | gtggcaaatg |
| 121 | cgagaacgcc | catcgctgga | gaccgagaat | ggcaaaggat | cgctgctcct | ggaaaatgaa |
| 181 | ggtgtcgag | atatcatcac | tatgtgtcca | ttcggagaag | ttattagtgt | agtatttccg |
| 241 | tggtttcttg | caaatgtgcg | aacatcgcta | gaaatcaagc | tatcagattt | caaacatcaa |
| 301 | cttttcgaat | tgattgctcc | gatgaagtgg | ggaacatatt | ccgtaaagcc | acaggattat |
| 361 | gtgttcagac | agttgaataa | tttcggcgaa | attgaagtta | tatttaacga | cgatcaaccc |
| 421 | ctgtcgaaat | tagagctcca | cggcactttc | ccaatgcttt | ttctctacca | acctgatgga |
| 481 | ataaacaggg | ataaagaatt | aatgagtgat | ataagtcatt | gtctaggata | ctcactggat |
| 541 | aaactggaag | agagcctcga | tgaggaactc | cgtcaatttc | gtgcttctct | ctgggctcgt |
| 601 | acgaagaaaa | cgtgcttgac | acgtggactt | gagggtagca | gtcactacgc | gttccccgaa |
| 661 | gaacagtact | tgtgtgttgg | tgaatcgtgc | ccgaaagatt | tggaatcaaa | agtcaaggct |
| 721 | gccaagctga | gttatcagat | gttttgagga | aaacgtaaag | cggaaatcaa | tggagtgtgc |
| 781 | gagaaaatga | tgaagattca | aattgaattc | aatccgaacg | aaactccgaa | atctctgctt |
| 841 | cacacgtttc | tctacgaaat | gcgaaaattg | gatgtatacg | ataccgatga | tcttgcagat |
| 901 | gaaggatggt | ttcttcaatt | ggctggacgt | accacgtttg | ttacaaatcc | agatgtcaaa |
| 961 | cttacgtctt | atgatggtgt | ccgttcggaa | ctggaaagct | atcgatgcc | tggattcgtt |
| 1021 | gttcgccgac | aatcactagt | cctcaaagac | tattgtcgcc | caaaaccact | ctacgaacca |
| 1081 | cattatgtga | gagcacacga | acgaaaactt | gctctagacg | tgctcagcgt | gtctatagat |
| 1141 | agcacaccaa | aacagagcaa | gaacagtgc | atggttatga | ctgattttcg | tccgacagct |
| 1201 | tactcaaac | aagtttact | ttgggacctt | gacgcgaatc | ttatgatagc | gcctgtgaat |
| 1261 | atttctggat | tcgatttccc | ggccgacgtg | gatatgtacg | ttcgaatcga | attcagtgta |
| 1321 | tatgtgggga | cactgacgct | ggcatcaaaa | tctacaacaa | aagtgaatgc | tcaatttgca |
| 1381 | aaatggaata | aggaaatgta | cacttttgat | ctatacatga | aggatatgcc | accatctgca |
| 1441 | gtactcagca | ttcgtgtttt | gtacggaaaa | gtgaaattaa | aaagtgaaga | attcgaagtt |
| 1501 | ggttgggtaa | atatgtccct | aaccgattgg | agagatgaac | tacgacaagg | acaattttta |
| 1561 | ttccatctgt | gggctcctga | accgactgcc | aatcgtagta | ggatcggaga | aaatggagca |
| 1621 | aggataggca | ccaacgcagc | ggttacaatt | gaaatctcaa | gttatggtgg | tagagtctga |
| 1681 | atgccgagtc | aaggacaata | cacatatctc | gtcaagcacc | gaagtacttg | gacggaaact |
| 1741 | ttgaatatta | tgggtgatga | ctatgagtcg | tgtatcagag | atccaggata | taagaagctt |
| 1801 | cagatgcttg | tcaagaagca | tgaatctgga | attgtattag | aggaagatga | acaacgtcat |
| 1861 | gtctggatgt | ggaggagata | cattcaaaaag | caggagcctg | atttgcctcat | tgtgctctcc |
| 1921 | gaactcgcat | ttgtgtggac | tgatcgtgag | aacttttccg | agctctatgt | gatgcttgaa |
| 1981 | aaatggaaac | cgccgagtgt | ggcagccgcg | ttgactttgc | ttggaaaacg | ttgcacggat |
| 2041 | cgtgtgattc | gaaagtttgc | agtggagaag | ttgaatgagc | agctgagccc | ggtcacattc |
| 2101 | catcttttca | tattgcctct | catacaggcg | ttgaagtacg | aaccgcgtgc | tcaatcgga |
| 2161 | gttggaatga | tgcctttgac | tagagctctc | tgcgattatc | gaattggaca | tcgacttttc |
| 2221 | tggctgctcc | gtgcagagat | tgcctcgtttg | agagattgtg | atctgaaaag | tgaagaatat |
| 2281 | cgccgtatct | cacttctgat | ggaagcttac | ctccgtggaa | atgaagagca | catcaagatc |
| 2341 | atcacccgac | aagttgacat | ggttgatgag | ctcacacgaa | tcagcactct | tgtcaaagga |
| 2401 | atgccaaaag | atgttgctac | gatgaaactg | cgtgacgagc | ttcgatcgat | tagtcataaa |
| 2461 | atggaaaata | tggattctcc | actggatcct | gtgtacaaac | tgggtgaaat | gataatcgac |
| 2521 | aaagccatcg | tcctaggaag | tgcaaaacgt | ccgttaatgc | ttcactggaa | gaacaaaaat |
| 2581 | ccaaagagtg | acctgcacct | tccgttctgt | gcaatgatct | tcaagaatgg | agacgatctt |
| 2641 | cgccaggaca | tgcttgttct | tcaagttctc | gaagttatgg | ataacatctg | gaaggctgca |

Fig. 15-1



Replacement Sheet

Title: Therapeutic and Diagnostic Tools for Impaired Glucose

Tolerance Conditions

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2701 aacattgatt gctgtttgaa cccgtacgca gttcttccaa tgggagaaat gattggaatt
2761 attgaagttg tgcctaattg taaaacaata ttcgagattc aagttggaac aggattcatg
2821 aatacagcag ttcggagtat tgatccttcg tttatgaata agtggattcg gaaacaatgc
2881 ggaattgaag atgaaaagaa gaaaagcaaa aaggactcta cgaaaaatcc catcgaaaag
2941 aagattgata atactcaagc catgaagaaa tattttgaaa gtgtcgatcg attcctatac
3001 tcgtgtgttg gatattcagt tgccacgtac ataatgggaa tcaaggatcg tcacagtgat
3061 aatctgatgc tcaactgaaga tggaaaatat gtccacattg atttcggtca cattttggga
3121 cacggaaaga ccaaacttgg gatccagcga gatcgtcaac cgtttattct aaccgaacac
3181 tttatgacag tgattcgatc gggtaaattc gtggatggaa attcgcatga gctacaaaaa
3241 ttcaaaacgt tatgcgtcga agcctacgaa gtaatgtgga ataatcgaga tttgttcggt
3301 tccttgttca ccttgatgct cggaatggag ttgcctgagc tgtcgacgaa agcggatttg
3361 gatcatttga agaaaaccct cttctgcaat ggagaaagca aagaagaagc gagaaagttt
3421 ttcgctggaa tctacgaaga agccttcaat ggatcatggt ctaccaaaac gaattggctc
3481 ttccacgcag tcaaacta ctga

Fig. 15-2

[illegible]

Fig. 21A-1



| | | |
|------------------|-------------|-----|
| Hnf3a | LSND | 227 |
| Hnf3g | LSND | 171 |
| D16123a467891011 | LSLHS | 205 |
| D1612567891011 | LSLHS | 330 |
| Afx | LSLHS | 158 |
| Fkhr | LSLHS | 221 |
| Consensus | LSLHS | 330 |
| Hnf3a | WONSIRHS | 269 |
| Hnf3g | WONSIRHS | 213 |
| D16123a467891011 | AGWKNISIRHN | 257 |
| D1612567891011 | AGWKNISIRHN | 382 |
| Afx | AGWKNISIRHN | 208 |
| Fkhr | AGWKNISIRHN | 271 |
| Consensus | AGWKNISIRHN | 385 |
| Hnf3a | FENGCLRRQ | 321 |
| Hnf3g | FENGCLRRQ | 248 |
| D16123a467891011 | IETTTKAQLE | 312 |
| D1612567891011 | IETTTKAQLE | 437 |
| Afx | MDSSSKLLRG | 256 |
| Fkhr | MDNNSKFAKS | 317 |
| Consensus | MDNNSKFAKS | 440 |
| Hnf3a | DSPLHRGVHG | 376 |
| Hnf3g | DSPLHRGVHG | 278 |
| D16123a467891011 | QGAFDNVPSS | 331 |
| D1612567891011 | QGAFDNVPSS | 456 |
| Afx | NREEADMWTT | 300 |
| Fkhr | NREEADMWTT | 371 |
| Consensus | NREEADMWTT | 495 |
| Hnf3a | SSGPGALASV | 430 |
| Hnf3g | SSGPGALASV | 324 |
| D16123a467891011 | PAIGS | 351 |
| D1612567891011 | PAIGS | 476 |
| Afx | GGVPTLN | 337 |
| Fkhr | GGVPTLN | 426 |
| Consensus | GGVPTLN | 550 |
| Hnf3a | LDFAKAYEQAL | 430 |
| Hnf3g | LDFAKAYEQAL | 324 |
| D16123a467891011 | LDFAKAYEQAL | 351 |
| D1612567891011 | LDFAKAYEQAL | 476 |
| Afx | LDFAKAYEQAL | 337 |
| Fkhr | LDFAKAYEQAL | 426 |
| Consensus | LDFAKAYEQAL | 550 |

Fig. 21A-2



| | | | | | | |
|------------------|------------|------------|-------------|------------|------------|-----|
| Hnf3a | GSTLPASLPL | GSASVTRSP | IEPSSALEPAY | YQGVYSRPPV | NTS | 473 |
| Hnf3g | GAE | RTDQRRIDAT | CCPEGVY | YQGLYSRSLP | NAS | 347 |
| D16123a467891011 | SDIVD | RTDQRRIDAT | THICGVQ | IKQESKPIK | TEPIAPPPSY | 397 |
| D1612567891011 | SDIVD | RTDQRRIDAT | THICGVQ | IKQESKPIK | TEPIAPPPSY | 522 |
| Afx | SSSLFSP | AE | GPLSAGEGCF | SSSQALEALP | TSDDTTPPAD | 381 |
| Fkhr | GQSSMSPLPQ | MPIQTLQDNK | SSYCGMSQYN | CAPGLLKEL | TSDSPEH..N | 479 |
| Consensus | V-----S | ----- | ---GG | -----S | -----E | 605 |
| Hnf3a | VRGSCAONP | LRNPIVPS | TNFKPMPLPG | AYGNYQNGGI | TPINWLSTSN | 473 |
| Hnf3g | VRGSCAONP | LRNPIVPS | TNFKPMPLPG | AYGNYQNGGI | TPINWLSTSN | 347 |
| D16123a467891011 | VRGSCAONP | LRNPIVPS | TNFKPMPLPG | AYGNYQNGGI | TPINWLSTSN | 450 |
| D1612567891011 | VRGSCAONP | LRNPIVPS | TNFKPMPLPG | AYGNYQNGGI | TPINWLSTSN | 575 |
| Afx | VDPILSOAPT | LL | LGG | LPSS..SKLA | TGVGLC... | 416 |
| Fkhr | VDPGVAOPNS | RVLGQNVMMG | PNSVMSTYGS | QASH..NKMM | NPSSHTHPGH | 532 |
| Consensus | V-----Q | ----- | ----- | ----- | ----- | 660 |
| Hnf3a | GIQSCGIVAA | QHTVASSSAL | PIDLENLTLP | DQPLMDTM.. | .. | 473 |
| Hnf3g | GIQSCGIVAA | QHTVASSSAL | PIDLENLTLP | DQPLMDTM.. | .. | 347 |
| D16123a467891011 | GIQSCGIVAA | QHTVASSSAL | PIDLENLTLP | DQPLMDTM.. | .. | 488 |
| D1612567891011 | GIQSCGIVAA | QHTVASSSAL | PIDLENLTLP | DQPLMDTM.. | .. | 613 |
| Afx | ARGPSSLVPT | LSMIAPPPVM | AS | APIPKALGT | PVLTPTTEAA | 458 |
| Fkhr | AVNGRPLPHT | VSTMPHTSGM | NRLTQVKTPV | QVELPHPMQM | SALGGYSSVS | 587 |
| Consensus | ----- | ----- | ----- | -----E | ----- | 715 |
| Hnf3a | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 473 |
| Hnf3g | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 347 |
| D16123a467891011 | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 510 |
| D1612567891011 | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 635 |
| Afx | PHSVKTTTHS | WVSG | WVSG | WVSG | WVSG | 501 |
| Fkhr | PHSVKTTTHS | WVSG | WVSG | WVSG | WVSG | 641 |
| Consensus | ----- | ----- | -----D | -----H | -----E | 770 |
| Hnf3a | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 473 |
| Hnf3g | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 347 |
| D16123a467891011 | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 510 |
| D1612567891011 | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 635 |
| Afx | PHSVKTTTHS | WVSG | WVSG | WVSG | WVSG | 501 |
| Fkhr | PHSVKTTTHS | WVSG | WVSG | WVSG | WVSG | 641 |
| Consensus | ----- | ----- | -----D | -----H | -----E | 770 |
| Hnf3a | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 473 |
| Hnf3g | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 347 |
| D16123a467891011 | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 510 |
| D1612567891011 | GRMGLLHQEK | LPSDLD.GMF | IERLDCDMES | ILRNDLMDGD | TLDNFEDNVL | 635 |
| Afx | PHSVKTTTHS | WVSG | WVSG | WVSG | WVSG | 501 |
| Fkhr | PHSVKTTTHS | WVSG | WVSG | WVSG | WVSG | 641 |
| Consensus | ----- | ----- | -----D | -----H | -----E | 770 |

Fig. 21A-3